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FINDING AND RECOMMENDATION(S)

Submitted by:_Lake Tahoe Area Air Quality Working Group

Finding:

Low emission fuel reduction techniques are part of the necessary tools needed to minimize health-based air quality issues and visibility impacts when reducing the forest fuel load.

Background and Supporting Evidence:

The Lake Tahoe Area Air Quality Working Group identified three uses for disposal of forest fuels which do not depend on favorable meteorological dispersion conditions. Forest Fuels/Biomass can also be utilized for electricity and/or heating generation, and has been separately reviewed under the Biomass Working Group's recommendations.

1. The first is the use of air curtain burners as a viable solution for forest fuel reduction efforts. These devices have been successfully used in the Tahoe Basin for fuels reduction efforts. Since air curtain burners are not restricted to the California burn day status it is possible to increase the amount of material that can be burned on days when open pile burning cannot take place.

   Air curtain burners can be used in close proximity to the forest and existing structures. They also have the potential to reduce the amount of smoke (particulate matter) generated between 80 to 90% over open burning practices. (Information from Air Burners LLC at http://www.aircurtaindestructor.com/). An emissions evaluation would be completed by the air agencies to confirm emission reductions prior to the issuance of a permit to operate and/or during actual operations.

Full Operation of Model S-116 - Lake Tahoe, California
Sugar Pine Point State Park

Photos from Air Burners LLC at http://www.aircurtaindestructor.com/

2. The second is utilization of forest fuels for firewood. Currently some firewood is imported into the Tahoe Basin for home heating, camp fires and recreational fires. This firewood is purchased at local stores or through private parties and adds to the existing fuels burned in the Basin. If firewood used for heating and recreational purposes were acquired within the Basin it would reduce the amount that is burned in open burn piles.

3. The last is utilization of chipped or masticated forest fuels as cover for best management practices (BMPs) and/or landscaping. Research indicates that chipping/mastication appears to be an effective thinning treatment for overstocked forests with few discernible negative impacts on soil compaction or lake-polluting runoff. (http://calag.ucop.edu/0602AMJ/pdfs/5_Mastication.pdf) Wood chips have proven to be a valuable commodity in the Tahoe Basin for erosion control practices, landscaping purposes, and bio-fuels facilities. The successful use of chips for erosion control has been utilized on public and private lands to stabilize the soil and prevent erosion on roads, trails, and other lands as well as to improve the aesthetics of an area.

http://calag.ucop.edu/0602AMJ/pdfs/5_Mastication.pdf
Mechanical mastication thins Lake Tahoe forest with few adverse impact,
CALIFORNIA AGRICULTURE • VOLUME 60, NUMBER 2

http://www.vermeer.com/vcom/EnvironmentalEquipment/Model.jsp?PrdInID=39643&ModID=83564
Mechanical grinding or mastication

Recommendation(s):

1. Consider air curtain burners as an alternative to open pile burning as one of the options for disposal.

2. Utilize the existing excess forest fuels (that must be removed to achieve forest health and fire protection purposes) for firewood and recreational experiences, especially in campgrounds and recreational areas. Encourage people selling firewood to use vendors that acquire their wood from the Tahoe Basin.

3. Encourage chipping and mastication practices whenever feasible with the by-product available for in Basin use.

Impacts of Implementation:

Analysis of impacts on the following factors is REQUIRED (Best Estimate):

The following information applies mainly to the air curtain burner.

- ☐ Cost
  Air Curtain:
  - o $70,000 to $130,000 for one air curtain burner
  - o Expected life 5 – 10 years
  - o Explore maintenance costs

  Chipping:
  - o $10,000 to $20,000 for each small chipper
  - o $80,000 to $200,000 for one grinder or masticator if needed
  - o Expected life 5 – 10 years
  - o Explore maintenance costs

  These can be leased or contracted from an operator instead of purchased.

- ☐ Funding source
  - o Burn Agencies
  - o State budget earmark funding
  - o Federal budget earmark funding
  - o Explore TRPA
  - o Explore SNPLMA
  - o Explore Air Quality Grant Funding

- ☐ Staffing (may be existing staff)
  - o One operator for air curtain burner
  - o Two operators for chipping
  - o Several personnel for hauling and loading.

- ☐ Existing regulations and/or laws
  - o Permissible and permittable by TRPA and air quality agencies in Nevada and California

  - o Would be exempt from California burn-day regulations
  - o California Air Resources Board (CARB) staff indicated to the California Air District's that permitting portable air curtain burner equipment under CARB's Portable Equipment Registration Program was not appropriate.

Analysis of impacts on the following factors is OPTIONAL:

- ☐ Operational: This equipment would be able to operate year round, regardless of California burn day status.

- ☐ Social: While there is some noise from the operation of this equipment, the lack of visible smoke (except for initial startup and shut down) improves the scenic beauty of the area for both residents and visitors.
- ☐ Political: This method of disposal is one of a number of tools that can be used to affectively dispose of forest fuel, thereby providing ample opportunity to use the best tool for disposal for different situations.
- ☐ Policy: Can be operated under existing air quality regulations with a permit to operate.
- ☐ Health and Safety: While far more material can be burned, the decrease in smoke generated from this type of burning or chipping operations makes this an operation that can be used in sensitive areas or more populated areas without causing a smoke nuisance.
- ☐ Environmental: Ash is a byproduct from using this burner. It is unknown if this would be transported to the local transfer station for use suitable for spreading on the forest floor or available for other local (or regional) uses, (e.g. landscaping). Permits from regulatory agencies will insure that other environmental impacts (i.e. clearing areas for “landings” for equipment and possible disturbance) are mitigated. Chipping can be used for BMPs or added to forest duff.
- ☐ Interagency: Adjacent land managers can work together in choosing an appropriate site that can work for multiple land owners.